Connacht Regional News

Traditiones et Spiritum Amateur Radio Servandum

Editor: ***Steve Wright EI5DD*** ***wright14@gmail.com*** **Vol. 1 Issue 6** **August 2022**

Welcome to the Sixth Edition of the Connacht Regional News

The Connacht Regional News is 100% *inclusive, unbiased*, and primarily written for the local Clubs and Groups in Connacht although there is a wealth of information that is of interest to all radio operators. More recently we have decided to include all aspects of Radio Communications and associated Groups. *Please Note:* We are *totally freelance* and in absolutely no way, tied into or affiliated to any one National Society. This enables us to report activities of *ALL* Radio Groups and Clubs in Ireland who wish to supply news items of interest.

It should be noted that, by taking a freelance stance, we are not favouring any Club Group or Society. If there is an absence of material from a Society or Club, it is because they did not supply material to us and this is naturally beyond our control.

We are fortunate that the West of Ireland has seven Radio Clubs within Connacht all of which are very active, as can be seen from their activities in our publication.

We do repeat forthcoming activities in several editions to give advanced notice of the event. To enable clubs and groups to prepare for them.

We promote >>ALL<< radio activities that are due to occur rather than report those that have happened. If you have an item of interest, please feel free to forward it to Steve. EI5DD, who will include it in the following newsletter.

Due to the overwhelming success and readership of the Connacht Regional news, now going viral, we will produce a publication MONTHLY.

A link may be found on the Galway VHF Group Web Page for the most recent copy of the Publication.

We Welcome Feedback so if you enjoyed this publication please mail Steve EI5DD:

wright14@gmail.com

Contents

August 2022

News & Events

Features

News From Our Clubs

Submitting Items To This Magazine

We are always delighted to receive any radio related material for this magazine.

It does take time to lay out a publication so we have deadlines as in items should be submitted by the 26th of the month giving us plenty of time to prepare for publication.

Please E-mail us in advance so that space can be allocated.

Cover Image

Anthony EI6GGB, Enda EI2II, Niall EI4CF, John EI6BHB, Owen EI4GGB, Tom EI4HCB operating EI3Z/p as part of the 2022 IRTS VHF/UHF field day

Views expressed in this publication do not necessarily reflect the views of the editor or those of the Galway VHF Group

News & Forthcoming Events

International Lighthouse and Lightship Weekend 20th - 21st August

For some reason or other August seems to have become the international weekend for lighthouses. Countries all over the world have become involved in one for or another of lighthouse activity. Some years ago the United States Congress declared August 7th as their National Lighthouse Day and during that first week in August amateur radio operators in America set up portable stations at lighthouses and endeavour to make contact with each other. This event is known as the US National Lighthouse Week.

In Britain, the Association of Lighthouse Keepers, ALK, conducts International Lighthouse Heritage Weekend on the same weekend as the ILLW in August. Their objective is to encourage Lighthouse managers, keepers and owners to open their lighthouse or light station and related visitors centres to the public with a view to raising the profile of lighthouses, lightvessels and other navigational aids, and preserving our maritime heritage.

However, the major event which takes place in August is the International Lighthouse Lightship Weekend, ILLW, which came into being in 1998 as the Scottish Northern Lights Award run by the Ayr Amateur Radio Group. The history of this event can be found elsewhere on this site.

The ILLW usually takes place on the 3rd full weekend in August each year and attracts over 500 lighthouse entries located in over 40 countries. It is one of the most popular international amateur radio events in existence probably because there are very few rules and it is not the usual contest type event. It is also free and there are no prizes for contacting large numbers of other stations. There is little doubt that the month of August has become "Lighthouse Month" due largely to the popularity and growth of the ILLW. This year the event This year **00.01 UTC 20th August to 24.00 UTC 21st August 2022 (48 hours)**

More information and registration https://illw.net/

RSGB Commonwealth Games Activities

The Commonwealth Games will be held in Birmingham from Thursday the **28 July 2022 – Monday the 8th of Aug 2022.** It will see around 4,500 athletes from 72 nations and territories, compete in 19 sports across 14 competition venues. The RSGB has just published news of the various activities it is planning to link with the Games. You can get involved in one of the seven special event stations or gain one of two special operating awards. Find out more on the Society's website at www.rsgb.org/cwg

AMSAT UK Colloquium

AMSAT-UK is very happy to announce the 2022 AMSAT-UK International Space Colloquium will be held as part of the RSGB Convention on **October 8th - 9th** at the Kents Hill Park Conference Centre, Timbold Drive, Milton Keynes, MK7 6BZ. The weekend event attracts an international audience that ranges from those involved in building and operating amateur radio satellites to beginners who wish to find out more about this fascinating branch of the hobby. Booking for the RSGB Convention is at https://rsgb.org/main/about-us/rsgb-convention/ Details of the event can be found at https://amsat-uk.org/colloquium/

JOTA Advanced Notice 14th - 16th of October

Advanced notice for the forthcoming Scouts Jamboree On The Air which is an excellent opportunity for local Radio clubs and Groups to introduce amateur radio to the younger generation. If you have a local Scouts troop near you, why not introduce yourself and offer the facilities of your club station for the JOTA weekend.

Jamboree on the Air - Jamboree on the Internet (JOTA-JOTI) promotes a Scout's sense of belonging to the worldwide Scout Movement and builds cultural awareness, develops tolerance, advocates sharing and collaboration as well as demonstrates teamwork. It provides exciting opportunities for young people to explore technology and to develop technical skills including fostering innovation and creativity through communicating with other Scouts. A wide range of activities using communication technology are the chief methods of attaining these goals.

JOTA-JOTI strives for a meaningful engagement of as many young people from as many parts of the world as possible annually on the third weekend in October. This weekend is also an occasion to celebrate Scouting and to generate positive energy to support the development of the Scout Movement.

The event seeks to promote quality Scouting in a manner faithful to the purpose, principles and method of Scouting and consistent with the needs and aspirations of young people in today's world. The JOTA-JOTI programme shall be a reflection of the Promise, Law, Principles and Method of Scouting, as defined by the WOSM Constitution, and shall also reflect the most up-to-date policies and initiatives of WOSM relating to youth programme for all ages.

JOTA-JOTI is an annual event that takes place the third weekend of October. Future dates are: - **14th to 16th of October 2022.**

For more information please visit the event website:
www.world-jotajoti.info

Irish Net

Active not only on Sundays, but most weekdays starting at around **16:00 UTC, the informal gathering on 14.156 MHz** frequently suffers from QRM during contests and DXers unaware of this long standing net of North American operators with an Irish connection. In a recent contact on 20m with WI1IDP, QTH Tuscon Arizona, operator Jerry confirmed that the net now also uses the **17m band operating on 18.114 MHz**, avoiding the increased QRM on 20m and taking advantage of improved propagation conditions

News & Forthcoming Events

International Air Ambulance Week 2022

International Air Ambulance Week 2022 is a 9 day Amateur Radio event commencing on the **3rd of September**. By putting on a station you will hopefully help raise awareness of the work these dedicated people do. They need all the support they can get. We would hope and expect that more than one station will support the same Air Ambulance, the more support each one gets, the better. So, if you see your local service already listed as being supported by an amateur station, there is no reason why you cannot register your own station in support too. Please get the word out there so they can continue to be there if we need them.

The intention of this event will be to help support the donation funded flying medical services around the world, by operating your special event station during some of the 9 days during which this event takes place. The nine days to include two weekends, so everyone can get an opportunity to take part. Information and Registration details may be found here:www.radio-amateur-events.org/IAW/index.htm

Railways on the Air - September

Railways on the air (ROTA) weekend usually takes place every year on the weekend closest to the 27th September. This date celebrates the anniversary of the first steam powered passenger railway which took place on 27th September 1825 - the first passenger train ran on a line in the Northeast of England from Darlington to Stockton. The plan is to run it on **24th and 25th September 2022.** This celebration is not a contest. We organise this so that radio amateurs have a good time and promote Amateur Radio while helping to celebrate the unique position railways hold in our national heritage. **Registration:** When you have the details of the Station, register on this website so we can keep everyone up to date with the latest news. Once the event is over and you have made more than 10 contacts, please email a copy of your log to the address on the Contact page and we will send a copy of a special event certificate. Register here: https://rota.barac.org.uk/register

National HamFest / RSGB Convention 2022

As a result of the relaxation of COVID restrictions the RSGB will be holding a normal "in person" HamFest / Convention on the **7th – 9th of October** in the Kents Hill Park Conference Centre, Milton Keynes, MK7 6BZ Details about lectures and speakers will be announced over the coming weeks. The programme includes five streams so there will be something for everyone .AMSAT UK will joining them this year and will host one of the streams. There will plenty of equipment to choose from at a huge rally in the venue.

The Perseids Meteor Peaks 12th - 13th of August

We are due to experience one of the most prolific Meteor showers, the Perseids which reach their peak between the **12th and 13th of August**. It is always better to prepare for these a couple of days earlier to be on the safe side. During this meteor shower it is possible to see the meteor trails in the sky if one is situated well away for interference from city or town street lighting.

A point to note, if using digital modes of communication for meteor scatter; it is necessary to ensure that the computer clock is locked to an NTP server to synchronise the time. It is important that all stations adhere to this. Of course anyone that uses the WJT-X suite would know this!

Additional Resources:

https://www.qsl.net/g3wzt/g3wzt_ms.html

https://rsgb.org/main/blog/news/rsgb-notices/2013/10/29/gw8jly-meteor-scatter-beginners/

There are many videos present on YouTube that will add to this article and get you started.

Radio Hams to Operate from Hot Air Balloon on 2 Metres

Belgium's UBA reports on August 10 **ON6ZT/AM** will be operating on 145.550 MHz FM from a hot air balloon A translation of the UBA post reads: "On **Wednesday, August 10th, 2022,** radio club Zottegem ON6ZT / UBA section ZTM will plan the Friends Round Flemish Ardennes from a hot air balloon.ON8VC Jurgen, ON3NSB Niels and ON5MB Bernard will provide the round on the known frequency 145.550 MHz. Balloon will take off in the Zottegem region (JO10??) and the flight will probably take 1 to 1.5 hours from max 2500 feet. Balloon will also be available to follow via APRS. Starting time probably between 18 and 20 hours".

Those who want to follow / work this unique round already put a big exclamation mark in their agenda at 10 August For a balloon ride, everything depends of course on the weather conditions. In case of bad weather, the round will not take place. More (technical) info and updates will follow via social media and https://www.on6zt.be/

News & Forthcoming Events

RBN Launches New Website

The Reverse Beacon Network has launched a revamped website at https://reversebeacon.net/ .RBN stations actively monitor the bands and report the stations they hear to the network. Those spots are then posted on the website, along with information such as band and signal strength. The new site brings back a live map on which spots are posted, along with colour-coded lines between the transmitting and receiving stations that indicate the band in use. The map updates frequently, with most recent spots shown. Many other new features are included. For information, visit https://reversebeacon.net/ , click on "about" and then "Guide to the new site (beta)".

URESAT-1

The CubeSat **URESAT-1** is a project of Spain's national amateur radio society URE and a blog about the satellite is available giving technical and status information

URESAT-1 is already a reality! It will be the first satellite of the Union of Spanish Radio Amateurs (URE), in this project, the URE and AMSAT EA are making a great effort that will give us greater technological visibility, a modern association and at the forefront of telecommunications for use and enjoyment. of its partners and all amateur radio in general

The URE, together with a great team of technicians and engineers, is hoping to launch the URESAT-1 satellite into space on a Space X Falcon 9 in January 2023.

If you are interested, you can donate through the Web and help in this great URE project, see https://uresat.ure.es/donaciones/

For more information, including many technical details, the URE has also created a WordPress blog where the status of the project will be reported, including details of the functionalities and techniques

. The blog is at https://uresat.ure.es/

International Shortwave League

The International Shortwave League (ISWL) is an international radio club. Founded in 1946, its membership is open to all licenced amateurs, SWL's and affiliated radio clubs around the world. Unlike most radio societies, the League effectively caters for members interested in both the Amateur and Broadcast Bands. Membership is equally open to licenced amateurs and Shortwave Listeners world-wide. The ISWL runs a QSL bureau for its members. The league publishes a monthly journal called ***Monitor***, which is issued to members. It contains sections concerning Contests, HF operations, Airband, DX news, Short Wave Broadcast schedules, as well as occasional articles written by League members, relating to QRP, VHF Operation, Antennas and much more. Members own articles are always welcomed by the Editor. The ISWL holds nets throughout the weeks at various times and on various frequencies where all are welcomed to participate whether IWL members or not. Net times may be found at:

http://www.iswl.org.uk/nettimes.htm

ISWL Home Page: http://www.iswl.org.uk/

144/430 MHz bands To Be Used For PMR During 2024 Olympics

France's National Frequency Agency ANFR has announced the amateur radio 144 and 430 MHz bands will be used for PMR voice comms, 1240 MHz for PMSE and 2.3 GHz for video links during the 2024 Olympic and Paralympic Games A translation of the ANFR announcement says:

"The France is preparing to host the Olympic and Paralympic Games (OLYMPIC Games) in Paris in 2024. The National Frequency Agency is in charge of drawing up the frequency plan and allocating frequencies for the Games.

To this end, it worked with all the assignees to assess the amount of spectrum needed for the organization and global dissemination of the Games. In this context, bands not primarily devoted to PMR, PMSE audio and video uses and to score and time management have been identified, as in previous editions of the summer JOP, in order to meet the consequent need for spectral resources.

ARCEP, assignee of the band 144 – 146 MHz has thus authorized, during the JOP which will take place from 26 July to 11 August and then from 28 August to 8 September 2024, that it can be used by the official broadcaster of the Games and its service providers, among other stakeholders. The band will thus accommodate the PMR voice service (walkie-talkie) in simplex pipes of 6.25 and 12.5 kHz, up to 1 W. This use of the strip by the Paris JOP has been authorized on the sites of competitions and non-competitions, about forty sites located mainly in metropolitan France, on the Territory of the Paris region (Paris, Elancourt, Versailles, Saint-Quentin-en-Yvelines, Saint Denis, Le Bourget, La Courneuve, Clichy Sous-Bois, Villepinte, Vaires-sur-Marne), but also in the provinces of Lille, Lyon, Saint-Etienne, Marseille, Nice, Bordeaux, Châteauroux and Nantes. Events will also take place in French Polynesia at the Teahupoo site.

In addition, on these sites, the frequencies of the band 430 – 440 MHz will also be used to accommodate the PMR voice (walkie-talkie) service in simplex pipe of 6.25 and 12.5 kHz, up to 1 W.

The band 1240 – 1260 MHz, open to amateur service on a secondary basis, will accommodate PMSE Audio equipment with a power of less than or equal to 50 mW and a pipeline of less than or equal to 200 kHz.

Finally, in the bands between 2300 – 2483.5 MHz, part of which is also open to amateur service on a secondary basis, mobile video links up to 10 W for a maximum channel of 20 MHz will be deployed.

The frequencies will be made available to the Organising Committee of the Paris 2024 Olympic Games during the period from one month before the Opening Ceremony of the Olympic Games to one week after the Closing Ceremony of the Paralympic Games, from 26th June to 15th September 2024. In order for them to be usable in good conditions, it seems essential to us that in the vicinity of the sites, their use by radio amateurs is moderated during this period. We rely on all members of the amateur radio community to do this"

http://www.southgatearc.org/news/2022/july/144-430-mhz-bands-to-be-used-for-pmr-during-2024-olympics.htm

Cinema Film With CW message

The recently released praised biographical film "Explorer" of Sir Ran Fiennes life has a fair number of clips of HF radio operations, with his late Wife, Ginny, and Laurence (Flo) GM4DMA now KL7L included ; HF comms were a mainstay of many of their expeditions from the early 70's thru 2000's. Amateur radio operations took place including successful 144/50MHz High latitude AuEs experimentation. The trailer for the film has a short CW message to be decoded The film is being shown at selected cinemas in the UK andwill be available via other methods in August. https://www.explorer-movie.com/home/

RSGB Direct to Full Licence Plan Unveiled.

The RSGB has unveiled details of **"Direct to Full"**, a new way to get a UK 'Full' amateur radio licence. This is an alternative way of getting a Full licence, without the need to go through the current 3-tier (Foundation > Intermediate > Full) route. Whilst not set in stone, they are still open to suggestions.

The exam has75 questions, lasts for 2.5 hours and is only available online (no paper version available). No practical assessments.

It is not clear whether the exam will be by "remote invigilation", or at a registered exam centre – we're under the assumption it will be "both" (as it currently is), with remote invigilation being the favoured option for most students.

The Direct-to-Full exam will consist of two parts, which are sat in the same session, both of which have to be passed. The first part has a higher pass mark, presumably to satisfy Ofcom that licence conditions are clearly understood – those from an electronics or RF background may potentially be 'weak' on the amateur radio specifics, probably why the bar is a little higher for the first part.

It is not gone unnoticed that this could be seen as a return to an RAE-style system, and it will be interesting to see how popular this route is, both with newcomers looking for a single exam, and for existing amateurs looking for a potential "shortcut" to upgrade to a Full licence.

According to the RSGB, those with a high-level aptitude in STEM disciplines and/or a background in electronics and/or communications may find the current three levels (and practicals) "unnecessarily onerous and off-putting".

The Existing structure of the tiered licencing system will still remain in place, but this initiative will allow those who do not feel the need to study in stages to go direct to obtain their full licence.

The three books covering the syllabus for the Novice, Intermediate and Full Licence may still be used as reference material for the "direct to full" course.

Nano Diamond Batteries

In less than two years, you might be able to buy a smartwatch powered with a radioactive diamond battery that will outlive you and your progeny for generations.

The potentially game-changing battery comes from the San Francisco based start-up Nano Diamond Battery (NDB), which lauds its namesake "high-power diamond-based alpha, beta, and neutron voltaic battery" for its ability to give devices "life-long and green energy." Imagine: Just one battery could power your insulin pump or pacemaker for your entire life (with loads of time to spare). Or it could provide the juice for a space rover, collecting Mars regolith samples for decades without any human assistance.

Those are ambitious goals. So, could NDB's bold claims become reality?

First, let's dissect the specs. To build its Nano Diamond Battery, NDB uses layers of impossibly tiny, panelled nano diamonds (for context, one nanometre is one billionth of a meter). Diamonds have exceptional heat conductance, which makes them ideal for electronic devices. In fact, they are the best-known natural conductor of heat, according to a publication by the University of Houston's College of Engineering and are three to four times more effective than copper or silver.

Scientists cultivate these miniature diamonds using chemical vapor deposition, a process in which gases at extremely high temperatures force carbon to crystallize on a substrate material. That process, NDB admits, creates a cost bottleneck; making the special diamonds is energy-intensive and expensive.

After all, they are artificially boron-doped diamonds and that process produces diamonds with blue colour and higher conductivity than the average diamond. True blue diamonds are naturally occurring on Earth, but they're rarer and even more expensive than artificial blue diamonds.

The diamonds in NDB's battery have a beautiful blue hue, thanks to the trace amounts of boron contained in their carbon structure. These blue diamonds are artificial, but are reminiscent of true-blue diamonds, which are some of the rarest gemstones on Earth.

Once NDB has sourced the nano diamonds, the company combines them with radioactive isotopes from nuclear waste. Specifically, they use radioactive isotopes of uranium and plutonium, which probably come from radioactive power plants' waste. From there, single-crystal diamonds, just a few square millimetres in size, move heat away from the radioactively decaying isotopes so quickly that the transaction actually generates electricity. The decay sources deposit their energy onto the NDB transducer, which converts the kinetic energy of the incident radiation to electrical energy.

You're probably wondering what the catch is. There's a diamond battery out there that really uses nuclear waste, lasts thousands of years, and involves layers of only the most minuscule diamonds.

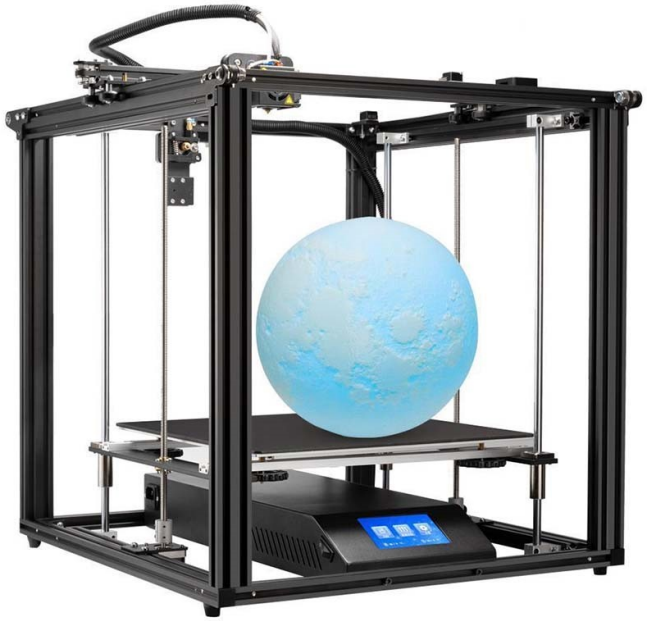
It's slightly more complicated than that. Each battery cell will produce only a small amount of energy, for one thing, so scientists must combine the cells in huge numbers in order to regularly power large devices, raising the cost a great deal, along with increasing the complexity.

The batteries could even prove useful in space vehicles that need to run for years without help, NDB says. Take satellites, for instance. NDB's claim that the battery lasts 28,000 years is based, in part, on these low-power space applications. Voyager, NASA's iconic space probe, meant to study the outer solar system when it launched back in September 1977—used three "Multi-Hundred-Watt Radioisotope Thermoelectric Generators" (MHW-RTGs) for power. Each generator's power output began at just 158 watts, which is less energy than you'd need to power a household light fixture for a year.

Still, NDB plays its cards very close to the vest, divulging few of the nitty gritty details about the Nano Diamond Battery (its power density, for instance). And, there aren't even video demos of the technology yet. But the promise of the radioactive diamond battery is still very real, and NDB's forthcoming smartwatch will tell us a lot about the feasibility of such technology in other applications. We'll be waiting, so all we have is time.

3D Printing for Amateur Radio

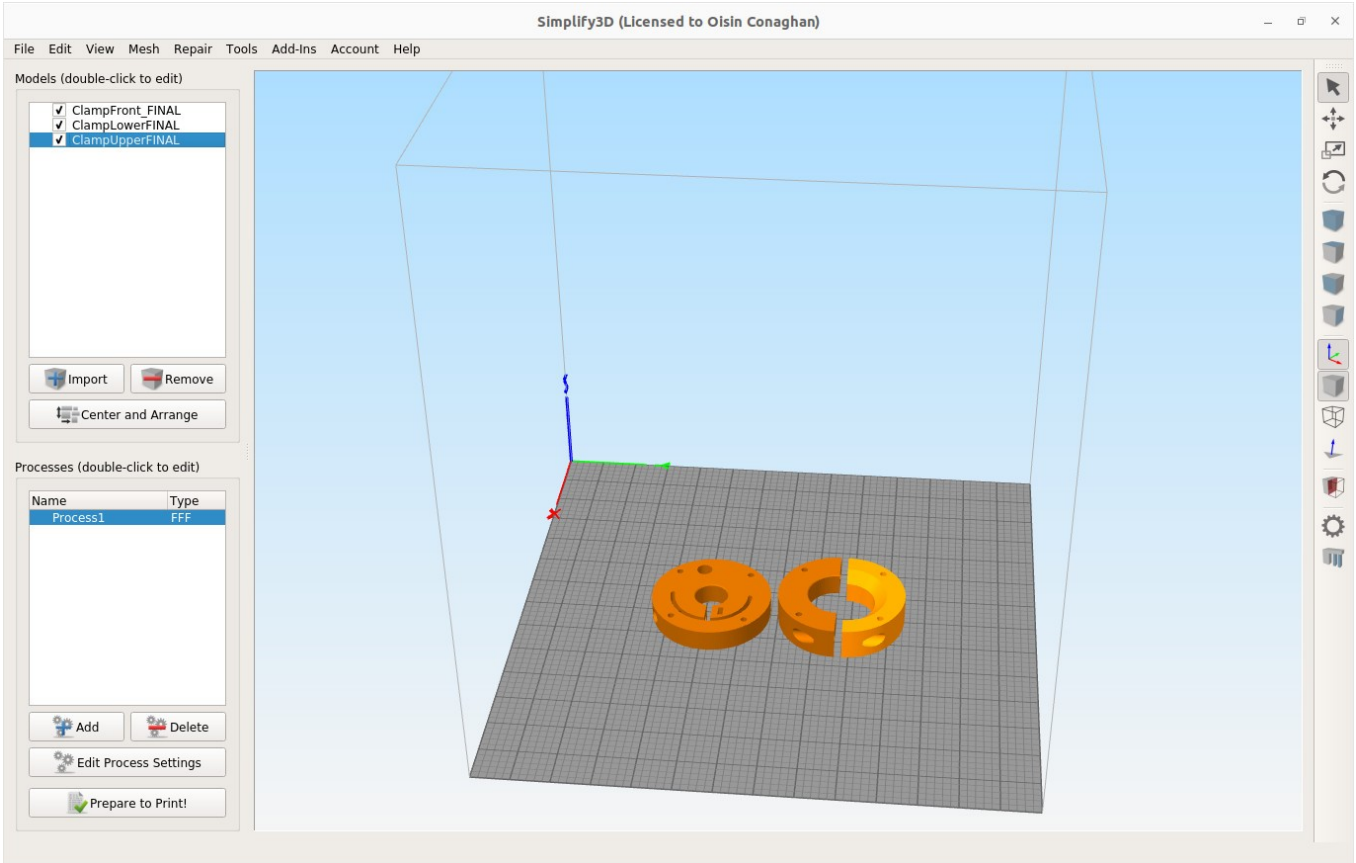
3D printers have come well down in price in recent years. Whereas once it would cost thousands, you can now buy a reliable 3D printer for less than €200.



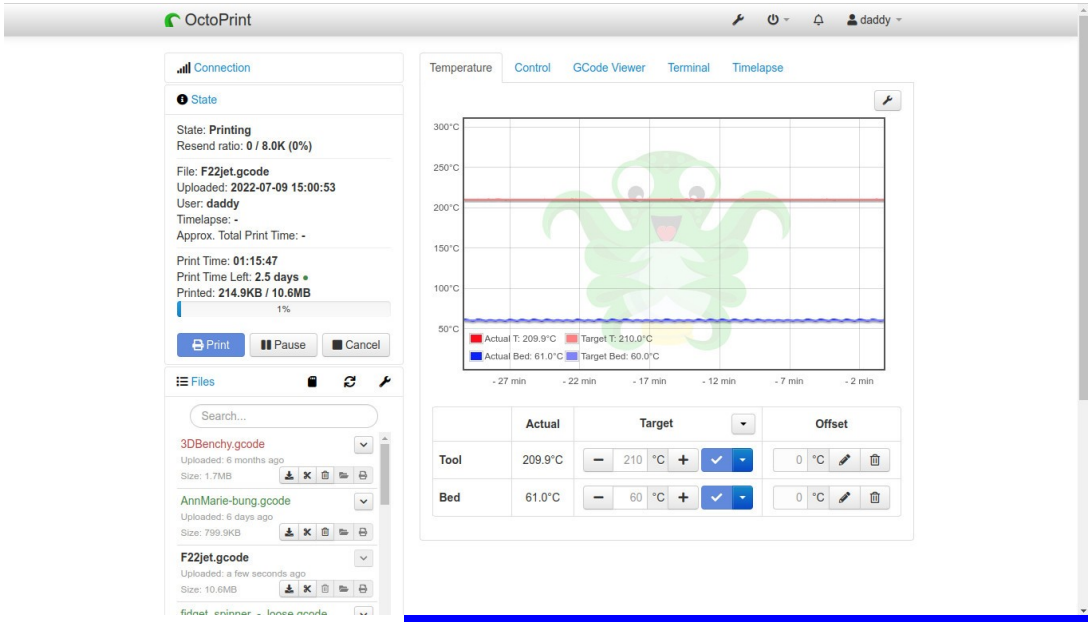
2 years ago, I bought a second-hand printer from a local ham and I still have it and use it to this day. One of the downsides to 3D printing is that it can take quite a few hours to print so I went mad and bought a new printer, so now I have 2. As some of you are aware, I'm a Linux user and don't use Windows at all and I thought I would have problems obtaining software for my new toys. But boy was I wrong. For designing parts I use FreeCad. FreeCad is available on Windows, Mac, and Linux and is totally free. There is a bit of a learning curve in how to use it, but once you get the hang of it, it's a really powerful piece of software. I've designed loads of parts both for amateur radio and home use.

For most users though, you can download, for free, parts already designed by someone else. Thingiverse.com has tens of thousands of parts available to download for free. Once you have your part to print you need another piece of software called a slicer. It converts the .stl file into instructions also known as gcode that your 3d printer can understand. I've tried two, Slic3r and Simplify3d. Both are available for Windows and Linux. Slic3r is free but Simplify3d at the time of writing is $149 USD. I tried Slic3r for a few weeks and although it had many great features, I just couldn't print high quality prints. I tried Simplify3d for a 2 week trial and really loved it. So I paid the fee and now it's my daily driver.

There are three ways to connect to your printer to print. The easiest way is to save your gcode file to micro sd card and using the touchscreen on the printer, select your file and print. Or you can connect by USB cable and print like a normal printer, but you must leave your PC turned on while you print. There is a better way though and this is what I use. I have a Raspberry Pi connected using OctoPi, a Linux Web based 3d printing solution. You simply use a Web page to upload your gcode file and start printing. You can then turn off your PC or laptop and the Raspberry Pi looks after all the printing for you. You can use any Web browser to check on the progress and you can even connect a webcam to see the progress if, like me, your printer is in another room. You can even set up a time-lapse! How cool is that?



So what's the process in 3d printing? First you need to either design your part in Freecad or download your part from thingiverse.com. Then you load that stl file into your slicer software. You then choose the quality, so if you choose low quality, it will print quite fast but if you want high quality, it will take quite a while to print. Some other things to be aware of is your first layer, and the adhesion of the first layer. To make things easy for me I use painters' tape on the bed and from time to time I level the bed. This is done quite easily by heating the bed and nozzle, and by using a normal 80gms sheet of printer paper set the gap between the nozzle and bed so that it just touches the paper so you can pull it without catching the paper. Sometimes the print will warp so adding a raft helps prevent that. You can't print in the air so you can add supports to print parts that are in the air. These supports can be easily removed after printing. Once you have all your parameters set, upload your file to OctoPi and start your print. Make a cup of coffee and watch the magic come alive.

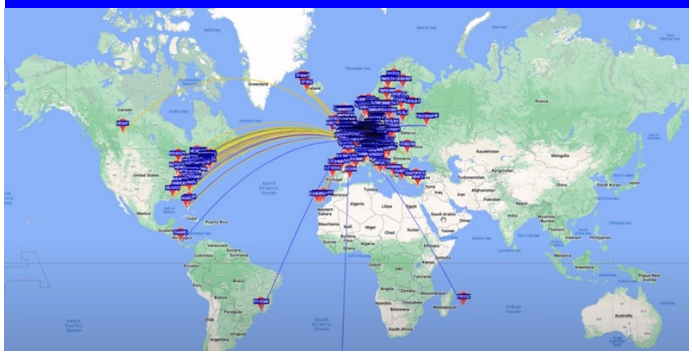


Printer filament is relatively cheap, €25 for a 1kg roll of PLA and that will last a long time. For example, I'm now printing an LNB holder for a Ham friend of mine and the material cost is €1.47. PLA is made from corn starch so is renewable. The quality of the finished item is as good as you would get if you bought it from a shop. And you can have your part in a few hours rather than waiting for a few days for the post man to arrive.

Over the 18 months that I've owned my 3d printers, I have printed hundreds of parts. From items like TV remote control stands, Raspberry Pi cases, headphone stands to project boxes and of course radio items like antenna insulators, lnb adapters, balun cases, novelty items like mugs with callsigns on them, and items for my electronic work bench. I've printed more items than I have room for on this article, but if it is made from plastic you can print it. If you're not sure what to print, go to thingiverse.com and type ham radio into the search box. You will be amazed what is there.

Micheal Na bPiob - MI0HOZ

Testing Antennas Using WSPR



There are many ways to test HF antennas ranging from simulation to various antenna analysers and bridges. However, nothing can replace simply using the antenna to see how it works. Now you can do it all with WSPR and [TechMinds] suggests a reasonably-priced dedicated WSPR transmitters do the job. You can see a video about the results of this technique below.

While WSPR is often cited as taking the fun out of ham radio, it is perfect for this application. Connect the transmitter and a few hours later, visit a web page and find out where you've been heard by an objective observer. If you had a few of these, you could even examine several antennas at similar times and conditions.

The transmitter has its own GPS so it doesn't require much configuration. You do need to set the frequencies you want to use and, presumably, the SWR at these frequencies of your antenna will be acceptable. Of course, you also need to set your callsign and transmission schedule. You can manually set the location code if you don't want to get a GPS setting.

Once set up, you don't need the computer connected. After some time, you can just visit the WSPR.org web site and view who has been able to hear the little low-power transmitter

A GPS Unit for the ICOM 9700

Having purchased an ICOM 9700 is became apparent that there was no GPS unit. Whilst not important, it does facilitate DPRS via D-Star. Obviously, I was not going to rest easy unless I could utilise the full facilities of D-Star. The ICOM IC-9700 has a GPS data input on the back of the set. Via a 2.5mm tip, ring and sleeve connection (TRS) allowing connection of a GPS unit.

There is no GPS accessory but there are several suppliers that will provide a unit, although these can be fairly expensive. Following a search on the internet, I landed on M0LMK's site with all the information that I required to build my own system, although the option to buy a ready-made GPS system was there for £43.00 which was a fair price.

Now, like most. I am a tight-fisted amateur radio enthusiast, so I decided to build my own for nearly the half the price! This involved waiting for items to arrive from China additional postage etc, so I would have been better off to buy the device from M0LMK. The wait for parts was so long that the enthusiasm had worn off and an old Garmin system would have done the same job!

Parts list

1) 5V GPS Puck with RS232 Output 9600 Baud €14.47 Available from: https://www.aliexpress.com/item/32878492421.html

2) Miniature 12v to 5v regulator (500mA) Screw terminal DB9 Connector No soldering required. ***Make sure this is the right gender for the plug on the end of the GPS lead*** https: www.aliexpress.com/item/32878492421.html

3) 2.5mm TRS Audio lead found in the shack junk box

The construction was simple.

Solder the 12V input leads to the Mini voltage Regulator board and solder two short lengths of wire to the output of the voltage regulator this should be 5 Volts. Check! Wire up the DB9 Connector as in the panel

Connections on the DB9 Plug

2.5mm Jack Tip ..... **DB9 Pin 2**

(TX Data on my GPS unit)

2.5mm Jack Ring ..... **DB9 Pin 3**

(RX Data on my GPS unit)

2.5mm Jack Sleeve ..... **DB9 Pin 5**

(Ground on my GPS Unit)

+5v from regulator ..... **DB9 Pin 9**

(DC 5.5V supply on my GPS unit)

-v from regulator ..... **DB9 Pin 5**

(Ground on my GPS Unit)

Setting up the ICOM IC-9700

Plug in the 2.5mm Jack into the data socket on the back of the IC-9700

Press Menu Button > Select From menu options:

Set > Connectors > USB(B)/Data Function > Data Function > GPS Weather **Fig.1**

Go back to main screen to set up the GPS Parameters

Press the Menu Button on Menu screen 2 and bring up GPS information

GPS Set > GPS Select > External GPS > GPs Baud Rate > 9600 Exit the menu. **Fig.2**

The ICOM will now receive data from the GPS unit.

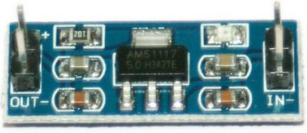
Plug in the GPS and switch on. The GPS symbol will appear on the top of the screen which means the GPS has locked to satellites. This may take a minute or two.

Press Menu > GPS > GPS Position > will show Position Data from the satellite. **Fig 3**

GPS Information will show the satellites and a Circle indicating position of the Satellites. From this point onwards, the GPS will send DPRS information out with the D-Star Signal.

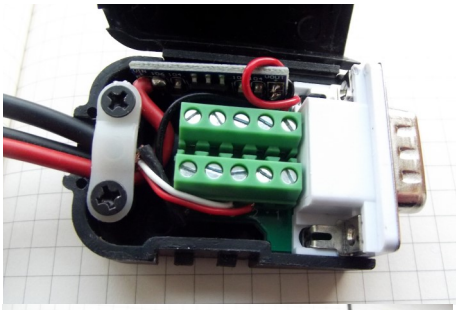
The same system can be used on an ICOM 7100 which does not have built in GPS either.

This system may be a cheap solution for those using the Kenwood TM-710 2m / 70cm transceiver amongst others..



12 Volt to 5 Volt Converter Board

2.5 x 1.0 cm



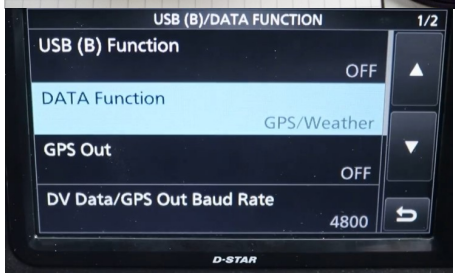


Fig. 1 Setting up GPS Data Function

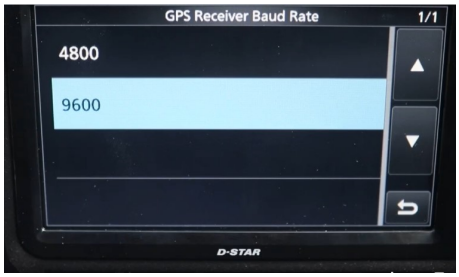


Fig. 2 Set up Data Rate 9600 Baud

Fig. 3 GPS Data on Screen

Reproduced from the Galway Radio Club Journal 2021

The Nano VNA

The VNA is probably the most coveted piece of equipment by any radio experimenter as it can measure many parameters used in circuit design and building antenna systems. Until recently, such an instrument would cost in excess of €1000 and beyond the pocket of most of radio experimenters. While the two main limitations to this device are restricted measurement points and dynamic range, it remains a useful piece of equipment.

The NanoVNA is a handheld Vector Network Analyzer (VNA) with small outline originally designed by edy555. It is a low cost (Typically around €70.00) yet high performance vector network analyser (VNA), with touch screen LCD display, and can be powered from a 3.7V Li-ion battery. The range of functions can be selected with a thumbwheel Of course, one could buy a HP system for a huge price, but this little device does more than enough for the everyday use by the radio Experimenter.

Whilst one could purchase a standard antenna analyser that will assist with the cutting of coax to a resonant length, figuring out the velocity factor of coax and measuring SWR, the VNA does so much more. The building and testing of baluns, RF chokes, measuring the parameters of filters and checking for breaks in coax feeders to name but a few facilities.

The NanoVNA covers a wide frequency range from 50KHz to 900MHz which is far wider than most antenna analysers. It will measure a number of parameters from showing a Smith Chart, to phase and delay, impedance, reactance and SWR

The NanoVNA comes with two SMA leads, a through connector, and three loads for calibration purposes , an open circuit, a short circuit and a 50-ohm load. The NanoVNA needs to be calibrated before use. The top end of the frequency range is more sensitive than frequencies at the lower frequencies. Following instructions from the website it is a simple and painless process to calibrate the the NanoVNA. As most will be using various coax connectors a set of SMA to N-Type or PL259 adaptors will be necessary.

The NanoVNA is small enough to use in the field but is not weatherproof and is fragile. It can be used in conjunction with a PC where it really becomes quite a sophisticated test instrument.

What can we measure with a VNA?

Single Port - Reflection Measurements

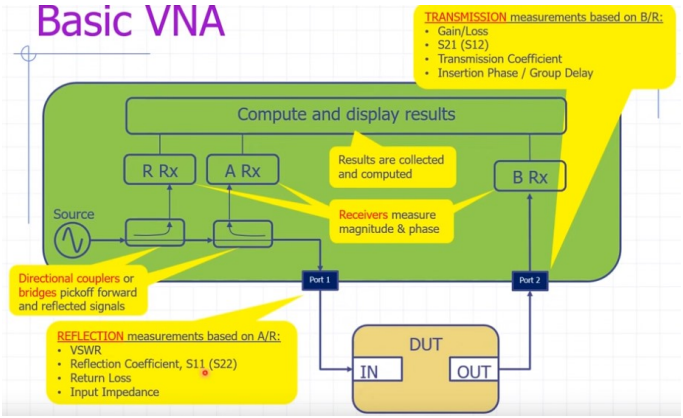
SWR of an Antenna
Complex impedance
Components (R, L, C)
Feedline length
Distance to Fault

Two Port Measurements - Transmission Measurements through a device

Filter Shape/Loss through feedline
Loss in Feedline
Delay in the Device Under Test (DUT)
Amplifier Gain and Frequency Loss

This allows the measurement of Antennas, Duplexers, Diplexers, Filters, Inductors, Capacitors, Amplifiers, Splitters, BALUNS, Chokes, Phasing Networks, Attenuators etc.

Most measurements are made vs frequency



The Two ports on the VNA are labelled CH0 and CH1 which correspond to Port 1 and Port 2 on commercial VNAs. They are also referred to as S1 and S2 which makes sense as the parameters tested by the VNA are usually referred to as S11, S21, S12 or simply means S1 Out and S1 in or reflected. S21 is S2 out and S1 in or transmission.

The NanoVNA primarily tests S11 and S21 parameters. S12 and S22 parameters can be measured with reduced accuracy by reversing the device under test. S11 and S21 etc refer to scattering parameters. The relected signals are referred to as the S11 scattering parameters and the signals that pass through the device are referred to as S21 scattering parameters.

There are a comprehensive set of YouTube videos covering the individual parameters of the NanoVNA and its practical uses. The key to success is the calibration any time one shifts from one range of frequencies to another.

It should be remembered that this device does have its limitations in the form of its dynamic range and its restricted measurement points although for everyday use this should no be a major problem.

It is well worth viewing the many YouTube videos covering the use of the NanoVNA. Some knowledge of the Smith Chart would come in handy for quick interpretation of displayed parameters. The NanoVNA is definitely the ultimate piece of test equipment for the shack.

The Tiny SA Spectrum Analyser & Signal Generator

Most radio amateurs would bite their own heads off to own a Spectrum Analyser. There have been projects in Radcom where a unit could be built that connects to the X and Y plates on an oscilloscope which would suffice, in many cases, but not way up into the VHF and UHF Range. Sadly, when it comes to test equipment, it is low on the priority list. A Rigol Spectrum Analyser could cost anything from a €1000.00 and then one has to justify the price. Enter the Tiny SA Spectrum Analyser.

Specifications

- Two inputs, one for the low range from 100 – 350 MHz and the second for a high range from 240 MHz – 900MHz.
- Input impedance 50Ω
- Manual or automatic attenuators
- Minimum input power +10dBM (0.71V_{RMS} or 10mW)
- Manual Selectable Resolution Bandwidth filters of 3, 10, 30, 100, 300 and 600KHz
- Automatic selection from 57 resolution filters
- 1dB compression point[2]+2dBm with 0dB internal attenuation
- 3rd intercept point[3]+15dBm with 0 dB internal attenuation
- Charge time 1 hour
- Operating time on full charge 2 hours
- Cost approx. €68.00

While the performance on the high range is not up to the standard of the low range, the input impedance is frequency dependant, 3rd order intercept is -5dBm and 1dB compression point is -6dBm, there is a software development underway to improve the high-end performance.

The Tiny SA will act as a signal generator with sine wave output from 100KHz to 350 MHz on Low Range. The output level is selectable in 1dB steps from -6dBm to 76dBm. AM, Narrow FM and Wide FM modulation is available. A sweep output function up to the entire Low Range is possible. On the high range only FM, wide or narrow, modulation is available, and the output is a square wave between -13dBm to -38dBm. The sweep method is limited to a slow sweep over a narrow span.

Calibration and testing functions are pre-programmed and take only 12 seconds to complete as the Tiny SA goes through a 10-step system test. Following this, select Config/Level/Cal/ Calibrate and this will take 2 seconds.

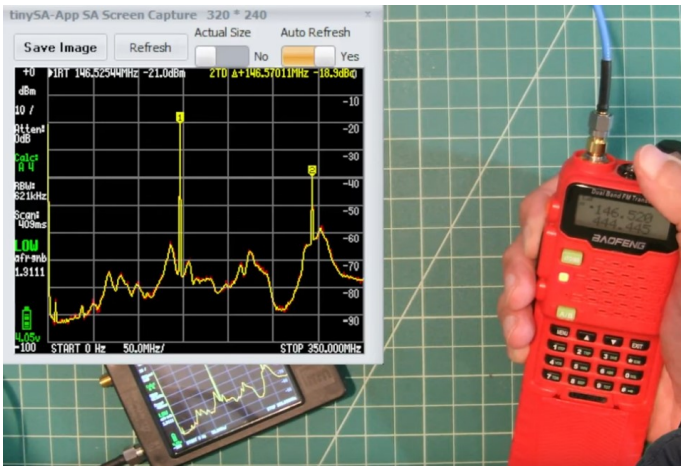
Controls are minimal with just an on/off switch and a jog wheel for selection of menu items. The left panel contains the settings and the banner across the bottom contains the scan information: start stop, centre etc and a waterfall can be added if necessary. The screen is touch sensitive and easy to use. Menu items can either be selected by turning the jog wheel ir roughing the screen.

It is possible to connect the Tiny SA to a computer via the mini USB socket bringing the benefits of a large screen, keyboard and mouse to control. This will allow screen capture of the display, selection of a wide number of basic test parameters from a drop down menu. The PC software may also allow the update of firmware on the Tiny SA. Many more facilities can be accessed via the PC Software.

Attenuators

Attenuators are important as the maximum inout to the Tiny SA is +10dBm. Above +20dBM will destroy the Tiny SA. External Attenuators are not expensive and can be readily acquired from EBay. 10dBm is equivalent to 0.707V RMS (2V peak to peak), which is 0.01W. Do not connect the transmitter directly to the Tiny SA. In practice

it would be better to use a sniffer in the proximity of a dummy load. The Tiny SA also comes with a telescopic antenna for picking up signals I the proximity.

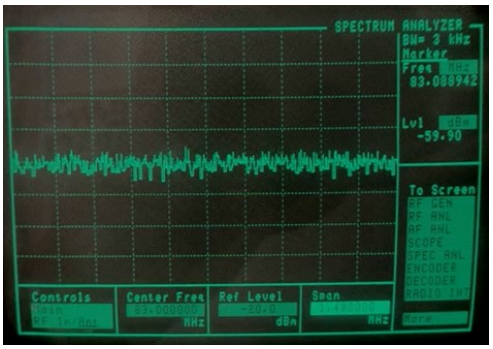


The picture above shows a transmission from a Baofeng UV5R-5. Sadly, on keying this transceiver, the difference between the fundamental signal and the 2nd harmonic is only 18.8dB which is not exactly wonderful suppression.

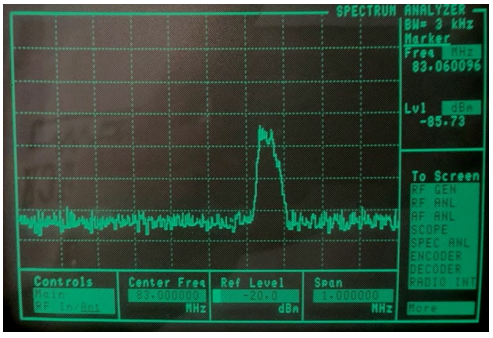
Filter Testing

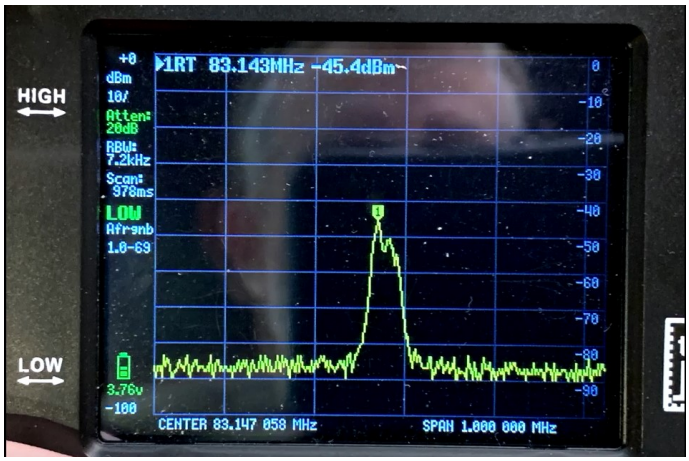
Normally, the testing of a filter with a spectrum analyser, a tracking signal generator would be required to provide a test signal while keeping the spectrum analyser trace synchronised to the sweep frequency. This is not an option for the Tiny SA however, a wide band RF noise source will yield similar results which is sufficient for most amateur purposes. A Noise source exploiting the thermal noise characteristics of Zener diodes can be built quite easily or maybe purchased from the internet.

Basically, a spectrum of RF noise is fed into the spectrum analyser and it a appears as a line of noise on the display as on the display below - in this case we are using a Hewlett Packard spectrum analyser



With the filter in line only the band of RF corresponding to the bandwidth of the filter will be allowed to pass through and the lower and higher frequencies are attenuated at the skirts of the filter as shown below.





The same filter is connected to the Tiny SA spectrum analyser with noise source in line giving the same results.

The tiny SA can pick up signals in the vicinity via a telescopic antenna. Whilst it could also be attached to a full sized external antenna it would be wise to ensure that there is no static charge present. This is best done by shorting the antenna leads together and touching them against a good earth before connecting the antenna to the test equipment. Better still, two back to back diodes connected across the input of the Tiny SA will limit the voltage input to 0.6V.

What else can the Tiny SA do?

- · Measuring Harmonics
- · Measuring Spectral Purity
- · Measuring Phase Noise
- · Measuring Third Order Intermodulation
- · Measuring IQ Balance
- · Measuring Spur Free Dynamic Range
- · Measuring Low Frequencies
- · Capturing ISM Transmissions
- · Tuning Sweep Settings
- · Coax Cable Impact
- · Measuring FM deviation
- · Measuring AM modulation
- · Measuring One dB Compression Point

The Tiny SA Spectrum Analyser is a versatile instrument and would make an excellent companion to the NanoVNA described earlier. Although assembled in China, the Tiny SA was designed in the Netherlands. It is wise to purchase the Tiny SA from a reputable source as there are many stories of counterfeit units on sale which do not perform to specification.

From time to time, Firmware upgrades are available for the Tiny SA and relatively easy to perform

References:

YouTube has many videos covering the use of the Tiny SA

Tiny SA homepage:

https://tinysa.org/wiki/pmwiki.php?n=Main.HomePage

FNIRSI DSO-TC2 Handheld Digital Oscilloscope LCR Meter

The FNIRSI DSO-TC2 Handheld Digital Oscilloscope LCR Meter FNIRSI-TC2 ingeniously integrates digital oscilloscope, electronic component tester, PWM signal generator and other functions into one device with a large colour dot matrix TFT display. Built-in rechargeable lithium battery.

The unit comes well packaged with a well written manual describing all of the functions. Also in the box, a complete set of test probes and leads as shown below.

The FNIRSI-DCO-TC2 has various working modes such as oscilloscope and component tester. Each time you briefly press the power button, it will enter the mode selection interface. Press the "Up" and "Down" keys of the direction keys to select, select "Mos Test" item, press "OK" key to enter component tester mode; Select the "Oscilloscope" item, press "OK" key to enter the oscilloscope mode.

Sockets for supplied test leads

2 In Function:

This product ingeniously integrates digital oscilloscope, electronic component tester, PWM signal generator and other functions into one.

This product is especially suitable for fast pairing of transistors, identification of mixed surface mount and unidentified components, and preliminary screening of small batch components.

The oscilloscope has a real-time sampling rate of 2.5MS/s and a 200kHz bandwidth. With complete trigger function (Single, Normal, Automatic), it can be used freely for both periodic analogssignals and aperiodic digital signals. Up to ±400V voltage signal can be measured, has a wide applications.

Equipped with efficient one-key AUTO, the measured waveform can be displayed without cumbersome adjustment.

Self-contained 80kHz /5.0V PWM waves test signal source with adjustable duty cycle.

This instrument can automatically identify and measure various transistors. Including NPN transistors, N-channel and P-channel field effect transistors, junction field effect transistors, diodes, double diodes, thyristors, and passive component such as resistors, inductors, capacitors, with automatic detection of pin definitions.

To test components, simply place the component leads in the “Locking IC Seat”, click “Test on the rocker switch to the right and the value will appear on the screen within 2 - 3 seconds.

Showing some of the test functions:

The screen will show the position of the component leads in the socket and the type of component, if unknown along with its value.

Oscilloscope Specifications:

Real-time sample rate: 2.5MS/s
Analog bandwidth: 0-200kHz
Input resistance: 1MΩ

AC/Direct current

Test voltage ranges:

1:1 probe: 80Vpp (±40V)
10:1 probe: 800Vpp (±400V)
Vertical sensitivity: 10mV/Div~10V/Div(in 1-2-5 increments)
Vertical displacement: adjustable, with indication
Horizontal time base ranges: 10us/Div~500s/Div (in 1-2-5 increments)
Trigger mode: automatic, regular, single
Tigger type: rising edge. falling edge
Trigger level: adjustable, with indication
Waveform freeze: yes (HOLD function)
Automatic measurement: maximum, minimum, average, rms, peak-to-peak, frequency, period, duty cycle
PWM output: FRQ: 0~80KHz, duty cycle: 0~100%, amplitude: 5.0V

Electronic Component Tester Specifications:

Capacitance measuring ranges: 25pF~100mF(capacitance value, loss factor Vloss)
Resistance measuring ranges: 0.01Ω~50MΩ
Inductance measuring ranges: 10uH~1000uH
Battery measuring ranges: 0.1~4.5V
Input voltage: 0~16V
PWM output: 1.5KHz~9.99MHz

While the Analog bandwidth of the Oscilloscope is only 200KHz, this is more than adequate for testing audio circuitry or performing **signal tracing** tests on circuit boards.

Should a component have failed in the circuit, it is simple to remove the suspect component and test before replacing it.

This versatile device is excellent value at approximately €50.00. It really encompasses the majority of the needs while testing or servicing equipment and can only be described as an electronic "Swiss Army Knife" as it performs so many useful tasks.

Available from Aliexpress

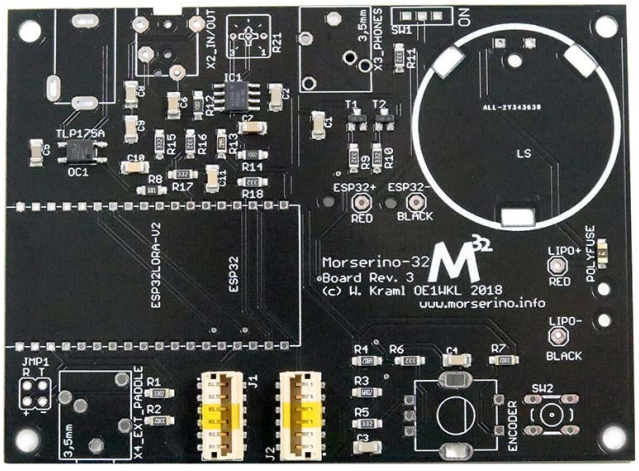
https://www.aliexpress.coitem/1005004216333435.html

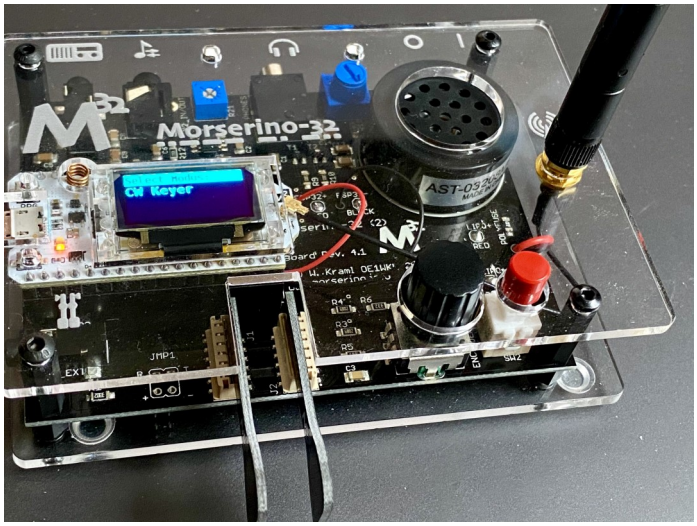
The Morseriono - 32 designed by Willie Kraml OE1WKL

Proficiency in sending and receiving Morse code, while no longer required to obtain a license. It is the best way to experience traditional ham radio and QRP Operation. Communicating with "dits" and "dahs" in a jumble of noise and other communications signals, and decoding by ear is much more fun than waffling on in voice ad infinitum. This article is not just about the merits of Morse Code, but more about an innovative kit produced by Willi Kraml, OE1WKL. Two facets of Amateur Radio may be fulfilled in the form of some home construction and learning to copy and experience Morse Code at your own pace. The Morserino will make this experience much less intimidating.

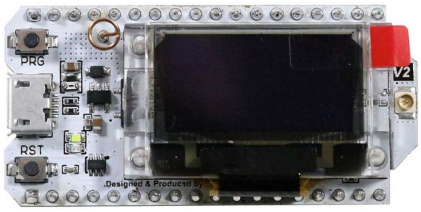
The Morserino-32 is a feature-packed microcontroller-based send and receive trainer, available from Willi Kraml OE1WKL for $99, including shipping from Austria. Morserino is a great trainer for both sending and receiving Morse code. In Echo mode, it sends you a few Morse characters and, using the built-in paddle or your own external paddle, your task is to exactly duplicate the character.

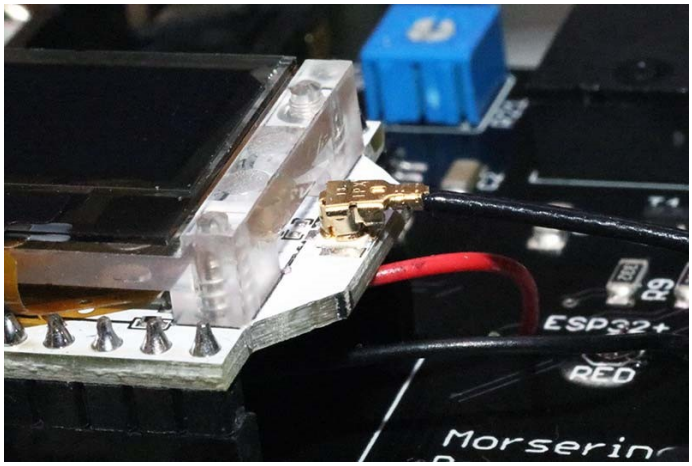
The Morserino is in kit form which adds to the novelty. It is not beyond the scope of anyone with a basic knowledge of soldering. All parts, except the battery, are included on purchase. There is not too much soldering and the whole kit could be constructed in an hour.





The kit is based around an inexpensive ESP-32 is an impressive chip with two cores, a 32-bit architecture, a CPU frequency of 160 MHz, 512 KB RAM, and 16 MB Flash memory. One core supports Wi-Fi/Bluetooth, leaving the other core for custom programming. See below





Features of the Morserino-32

Hardware

- ESP32 Microcontroller w/ WiFi, Bluetooth & LoRa (Bluetooth not being used)
- OLED Display (128 x 64 pixels, monochrome)
- 1 status line
- 3 line text screen with 15 lines buffer (you can scroll back)
- Capacitive touch paddles
- User interface through one Rotary Encoder and one additional Push Button switch

Connections for:

◆ Transceiver (through MoseFET optocoupler, safe up to 60V, any polarity)

◆ Audio in (for Morse decoder) and Line-out (for things

like iCW etc)

- ◆ Headphone output
- ◆ Capacitive touch paddles (which are included)
- ◆ External Paddle or Straight Key

Firmware Features

CW Keyer

- Speed variable with encoder (5-50 wpm)
- Polarity of paddle can be changed (dots on left or right paddle)
- Iambic A, B and Ultimatic mode for paddles, and Straight Key mode
- Iambic B parameters (timing) configurable, independently for dots and dashes
- Pitch control
- Output volume control
- Optional ACS (Automatic Character Spacing)

CW Trainer (Code generator)

- ♦ Speed variable with encoder (5-50 wpm)
- ♦ Generates random character groups, call signs, common CW abbreviations incl. Q-Groups, common English words
- ♦ Select which characters to be output (Koch method, or combination of alpha, numerals, interpunction, pro signs, or user defined character set)
- ♦ Define length of words to be output
- ♦ Increase inter-character space (like Farnsworth method)
- ♦ Increase inter-word space (sometimes known as Wordsworth)
- ♦ Optional: output each word twice
- ♦ Can also play text files in Morse Code, these can be uploaded through WiFi
- ♦ Files can contain ASCII text and pro-signs
- ♦ Words in files can also be played randomly
- ♦ CW Echo Trainer (Challenge / Response)
- ♦ Morserino-32 prompts you with a word in CW, and you have to respond by repeating it with the paddle
- ♦ Now also supports straight key!
- ♦ Large variety of words, as in the CW Trainer
- ♦ Ideal for learning to read Morse code in your head!
- ♦ Koch Method
- ♦ Learn character by character
- ♦ Use CW Generator and Echo Trainer for characters Support of custom character set to train exactly what you need
- ♦ CW Decoder (from straight key or with audio input)
- ♦ Check and improve the quality of your straight key fist by using the decoder
- ♦ Decode Morse code received by a shortwave receiver, or via a computer
- ♦ CW Transceiver
- ♦ Using LoRa (Long Range WiFi) in the 432 MHz ISM Band!
- ♦ New transceiver mode WiFi Trx allows Morse communication across the Internet (directly over WiFi, no PC needed)
- ♦ Great for learning how to conduct QSOs in CW
- ♦ Ideal for group learning or learning with a teacher / mentor
- ♦ You can also use Morserino-32 for iCW (CW over Internet using the Mumble protocol) - you need to connect to a PC for that
- ♦ Firmware Update through WiFi (from all platforms that have an Internet browser) or USB (Windows & Mac)

As seen from the specifications of the Morserino we have moved a long way forward from the old DATONG Morse Tutor that allowed variable speed and spacing of characters and the MFJ Tutor that did at least display the characters as they were being sent.

Starting the Morserino-32 is as simple as sliding the power switch to the on position. If you have either a charged LiPo battery or the USB power cable connected to a live source, then the OLED screen will announce the version number of the firmware

There is a potentially intimidating list of functions easily accessible through the intuitive OLED-based menu system. Most of your interactions will be with the black encoder and red momentary contact switch. If you're the owner of a modern transceiver, then you'll quickly learn to work the two components to select mode, set volume, speed, and other parameters.

The small speaker produces more than enough volume for practice, and the removable paddles are surprisingly very good, considering the cost of the unit.

For more information on the Moserino-32 project (including how to subscribe to the user group), check out the official website.

I would seldom rave over Morse code but the Morserino does tick all the boxes for learning and is not as boring as some of the online methods.

You can also contact Willi Kraml OE1WKL at info@morserino.info. As you'd expect from an amateur radio operator, he's friendly, super responsive, and committed to helping others learn Morse code.

In a broader context, for more information on Morse code and amateur radio, check out the Straight Key Century Club (SKCC) at skccgroup.com. The SKCC is the worldwide group of mechanical-key CW operators. Membership is free for the asking.

Another organization worth investigating is FISTS: The International Morse Preservation Society

FISTS has a slightly different twist on Morse code in that it was started to promote the use of CW in any form, including electronic paddles. Membership is currently free. Their quarterly newsletter, Keynote is also freely available through the FISTS website.

Listen at the bottom end of 80 metres. 3500 - 3600 KHz early in the evening around 6 pm. There are a number of slow CW ops to be found there and most of the operators are quite content to work slow CW. As the evening progress the operation will become faster from 8pm onwards.

Resources:

http://www.morserino.info/

https://fists.co.uk/resources.html

http://www.cw4u.org/download/CW4U_poster_ENG.pdf

Kells Radio Club Projects

Ronnie McGrane EI9ED, a member of the Kells Radio Club, started his career as an electrician working in the Dublin area and subsequently in Navan. It was the use of two-way radio during the course of his work that gained his interest in amateur radio along with the fact than another colleague was also licenced. From here, Ronnie set up his own business in the Kells area and became a supplier of Communications equipment to trucking and taxi companies.

6m, 4m, 2m, and 70cms Crossband Repeater

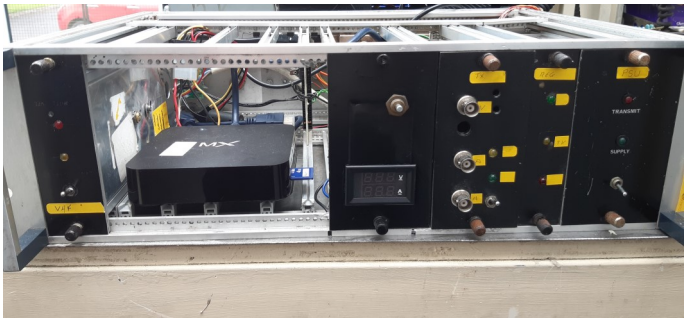
Naturally, over the years, he would have built up a collection of ex -commercial gear which was highly modifiable for the amateur bands. In those days it would have been Pye equipment although Tait, and possibly some Motorola gear would have come his way in later years. Ronnie has a preference for Tait gear as it is so much easier to program.

When Repeaters were beginning to come online in Ireland, Ronnie built his own systems from ex-commercial equipment. Naturally a 2 metre Repeater was the first project, but this was followed by the first 70cm Repeater in the country. Ronnie says that Albert Latham, EI6AS was the first person to put a call through the system.

The interest did not just stop at monoband Repeaters as Ronnie was also the first to set up a crossband repeater system connecting 2 metres to 70cms and 4 metres. This was later to benefit talkback for ATV contacts.

Through the course of his work, Ronnie was also interested in Television projects and his attention swung towards Amateur Television. Initial experiments involved Analog TV on 23cms, 13cms, 5GHz and 10GHz. There had been an interest in the Dublin area and amateurs such as Rod Power, Paul Kearney, Albert Latham, Mike Wright and Charlie Lyons would have become involved.

ATV 23cm, 13cm, & 10 GHz Monitor



70cm Digital ATV Repeater Under Construction

As can be seen in many of the pictures, all of Ronnie's equipment was constructed from second hand treasure acquired from rallies and ex-commercial fallout. Ronnie is a very adept at chassis bashing so his projects look very professional.

Interestingly, Ronnie does not approve of IRLP, Echolink or Allstar as a means of interconnecting his systems and states that he prefers to link his Repeaters via Radio Links using amateur frequencies. He may have a good point here.

Following the introduction of Digital Voice communications such as D-Star, DMR and C4FM, Ronnie made a point of learning more about Digital Radio from groups in Northern Ireland who had been setting up a comprehensive infrastructure around Northern Ireland. Whilst their main interest had been D-Star, DMR was also coming to the forefront.

D-Star had been around for a few years, but DMR was a new development and also a little more reasonably priced. Ronnie saw an opening here that may bring more younger people into the hobby.

It was Ronnie that introduced the concept of DMR Radio to a Committee Meeting of the IRTS. At the time Digital Radio was only just becoming established in commercial systems. Steve, EI5DD, and John, EI8JA had been toying with the idea but Ronnie was the trigger to make a start in introducing new equipment to the scene. So basically, we can attribute Ronnie for the introduction of Digital Voice Repeaters into the Irish Repeater service!

More recently, with the generous allocation of the frequencies from 30 MHz – 70.500 MHz, Ronnie saw an opening for a 4 Metre Repeater. With a wider allocation centred around 70 MHz it would be possible to use a spectrum between 69.000 MHz – 70.500MHz. This would make it possible to establish a Repeater with a Transmit frequency on 69.9125 MHz and a receive input frequency of 70.4875. Following initial discussions with ComReg, there seems to be no opposition from the Regulator to this system. We await patiently for the outcome of the Repeater Co-ordinating Committee. When this system becomes operational, it should provide a substantial range in comparison with a similar 2 metre system. Naturally, 4 metre operators are awaiting some good news on this one.

ATV Repeaters 23cm, 13cm & 10 GHz

The current project is to upgrade and modernise the ATV repeaters to a DATV system. The project has gone beyond the planning stages and the more intricate parts are being acquired from sources within the BATC. There is a Rally in the UK, in the Coventry area, where BATC will be in attendance so the last of the circuit boards will undoubtedly be acquired.

Like All repeater keepers, Ronnie enjoys the work and providing the service for others to use. As he says, a repeater keeper will never become a rich man although the greatest reward is to hear individuals using the services he provides.

As can be seen, Ronnie is a true Radio Experimenter with a preference towards modification of equipment to perform a function. All of his equipment is Home Built from good quality ex-commercial equipment.

Would You Like to Promote Your Club and its Activities?

Is your club planning an event in the next month?

Are you planning a club activity?

Are you setting up a new Repeater or Gateway?

Drop us a line or two and we will include your item in the Connacht Regional Newsletter

Hillwalking Community Radio Club

Hillwalking Radio Club have three events lined up for the month of August. During the Bank Holiday weekend we will act as stewards for The Hike for Hospice to Lake Muscary in the Galtee mountains. It's all about supporting and being part of the community. For this event we will work alongside Tipperary Red Cross Unit One of their members will act as Base Controller using their land rover defender. .

Our second event will be mountain first aid training with our instructor John Mulready on the 13th of August in the Glan of Aherlow. Our third event is a bread and butter event. We will run our annual Ramble which is a low level walk to megalithic burial site called Darby's Bed near the village of Galbally on the Tipperary Limerick border with spectacular views of the Galtee mountains. This year we will run a second event for non hill walkers, a guided historical tour of the village. Tea refreshments and raffle afterwards.

If our fellow radio ops would like to support us please Donate via this link : Keep Your Mountain Safety Team Going [Keep Our Team Going](#) or via Revolut on 086-0888145 better still call and meet us.

From L to R Joan, Anne, Denny and Eddie EI3FFB on the quad bike is Susan Moore.

Facebook:

https://www.facebook.com/Hillwalking-Radio-Club-1184379331613337

Website:

https://www.sites.google.com/view/hwrg

Shannon Basin Radio Club

On Sunday July 3rd, intrepid club members set up a portable station as part of the 2022 IRTS VHF/UHF Field Day. Donning jackets and hats for a chilly start early on Sunday morning, the team operating EI3Z/p took part in the restricted six-hour SSB/FM segment on 2m. The plan was to be back and warmed up to cheer on Galway in the All-Ireland hurling semi-final that afternoon. The picturesque area of Derrybrien in Co. Galway (IO53qc) was chosen as the location for the event. Overlooking the Galway-Clare border, the only noise sources on the elevated site were only from the wind, a nearby small stream, and shouts as the team discovered a high SWR issue with the big 10-element loop-fed array. With the large antenna out of action and limited to using a 3-element vertical beam, club members worked stations in Ireland, UK, and France. The best DX on the day was 670km to a portable station in France. The club is looking forward to the next VHF/UHF field day opportunity with a bigger and better set up.

John EI6BHB and Anthony EI6GGB checking the portable set up

Anthony EI6GGB, Enda EI2II, Niall EI4CF, John EI6BHB, Owen EI4GGB, Tom EI4HCB operating EI3Z/p as part of the 2022 IRTS VHF/UHF field day

Forthcoming Club Activities

Shannon Basin Radio Club schedule of events continues over the coming months:

July 30th & 31st: Club members operating as EJ3Z on Inishbofin for the 2022 Islands on the Air (IOTA) contest

September 4th: Lough Rynn Harvest Festival station in Leitrim

September 24th & 25th: SSB Field Day 2022

Enquiries and New Members Are Always Welcome

Further information about Shannon Basin Radio Club can be found at the club website https://www.sbrc.ie/ and via their Facebook group. Shannon Basin Radio Club has a very active membership drawn primarily from the midlands and west of Ireland but also further afield in the U.S. The club takes part in a very diverse range of amateur radio-related activities with an emphasis on fun, learning, and experimentation. New members are always welcome, and the club would be delighted to receive enquiries from anyone wishing to learn more.

Owen EI4GGB operating EI2SBC/p during the VHF/UHF field day

Keith EI5IN – Shannon Basin Radio Club PRO

Club Activities

Galway Radio Club

Our Club Monthly Meetings:

The Galway Radio Club met in the Menlo Park Hotel for the monthly club night. It is generally held on the first Monday of every month, except if it is a Bank Holiday in which case, we meet on the second Monday of the month. We also support a virtual presence via. Jitsi (https://jitsi.org/).

It generally a well-attended night with members being both physically and virtually present.

Focus:

The focus of our monthly club night is, as a rule, all things Ham Radio is about – learning about new things, sharing information on what works (or doesn't work), showing new (or old) pieces of equipment and giving presentations/demo's where we can. Any "club administration" is handled separately by our committee and only bring to the Monday night meeting anything that the club members need to be made aware of. Of course, Monday night club members can also raise questions/ concerns/issues etc. to the committee

L - R Paul EI5IPB, Gerry EI8EXB and Tom EI3ER Control Station at the Finney Walk

Last Club Night:

Last club night (4th of July), we had a very good presentation again by Aoife (EI8HOB) titled "Sending and Receiving Analogue SSTV".

As part of the demonstration, Aoife recapped briefly on the history of SSTV, and referenced the frequencies that can be used across HF, VHF and UHF. She went on to show her setup with consists of a PC with an RTL-SDR dongle, SDR#, virtual cables and RX-SSTV for the decoding with screenshots showing a decoding in progress.

From there, she talked about an automatic remote SSTV transmitter using a Raspberry PI, a PMR handheld and 2 cameras – one of the cameras was a regular Raspberry Pi camera, the other was an infrared camera. This was all "joined" together with software – both downloadable as well as hand-written in Python. Aoife showed us different sets of infrared images of a car – it was very clearly shown how the heat of the engine could be seen in the infrared camera.

Finally, Aoife showed us images of the actual remote SSTV transmitter itself, including all the components and how they were connected. This led to a very interesting discussion on how these components were connected, and how the system worked as a whole. Everyone at the club night was very impressed with what Aoife had done, and one of the comments made was that the standard of build quality was very high!!

This demonstration was then followed by one on TiddlyWiki given by Paul (EI5IPB). TiddlyWiki is described as "a unique non-linear notebook for capturing, organising and sharing complex information" according to its website at https://tiddlywiki.com/. This is a free tool that can be used on your laptop/PC across different operating systems and can be used to gather all sorts of information in one place, in a structure that suits you.

Paul showed how you get the initial "empty" TiddlyWiki and how you can create tiddlers (aka notes) containing all sorts of information (including copy/paste of images, documents etc.), and how to use the simple markup language to provide formatting. Paul then went on to show how he uses it for all his Amateur Radio "stuff" and provided some examples of how he uses it at work as well.

Tom (EI3ER) brought up the topic of Morserino-32 (see http://www.morserino.info/). Both Tom and Enda (EI2II) had been talking to one of the creators of the device at Friedrichshafen, and Enda already has one. It seems like an interesting project to take on over the winter period and so we number of the club members indicated interest in a group order going in. The creator will be taking some time off, and won't be taking orders again until September, so definitely a winter project.

This also led to the topic of soldering, and "The Good, the Bad and the Ugly" of soldering. So, we are going to hold a soldering session in the September/ October timeframe to tie in with work on the Morerino-32 and learn, among other things, how not to burn fingers!!

Finally, we had a brief discussion on the Ham Rally in Friedrichshafen which several club members went to. It was a general discussion, wandering from both the travel to/from there (and security delays), to the event itself and wanderings around the area. Not much was given as the phrase "What happens in Friedrichshafen stays in Friedrichshafen" was sometimes quoted However, we are hoping that one of our members will provide a report out of the trip as a whole to share with everyone. The event is already advertising next year on 23-25 June 2023 - see https://www.hamradio-friedrichshafen.com/ for more information.

August is going to be an exciting month as we are going on our annual pilgrimage to Inisboffin for week. This has been ongoing for 30+ years so a great time for all to get together and have some fun while also doing "radio stuff". Our next club night is the 8th of August.

Club Activities

Northern Ireland Radio Club Meetings

The Strangford High Frequency Enthusiasts Group is accepting UK-wide enrolments for the next UK Full licence training programme. They also use Google Meets on Monday evenings. It is completely free, email GI0VKP@gmail.com for details or see the QRZ.com entry for GI0VKP.

On Tuesdays **Carrickfergus Amateur Radio Group** meets in the Elim church, North Road, Carrickfergus from 7pm. All visitors are welcome. Info from gi0usx@yahoo.co.uk

Bushvalley Amateur Radio Club has a club net on Tuesday at 8.30pm on 145.300MHz. On Thursday, the club meets at The United Services Club, Roemill Road, Limavady. Contact Jason, MI3UIW, via email to Bushvalleyarc@gmail.com

Dundalk Amateur Radio Society

Dundalk Amateur Radio Society is based in Dundalk, Co. Louth Ireland. The society was established in 1969 by a number of like minded amateur radio operators from the Dundalk area. EI7DAR, EI0W, EI2MOG, EI2CCR, EI4FMG and EI7DKD are the amateur radio callsigns issued to the society by ComReg. The Society has its own clubhouse located on the Castletown Road in Dundalk, from this location they hold their monthly meetings and other amateur radio based activities. The next meeting of DARS takes place in their clubhouse at 8:30 pm on Wednesday the 6th of July

North Dublin Radio Club

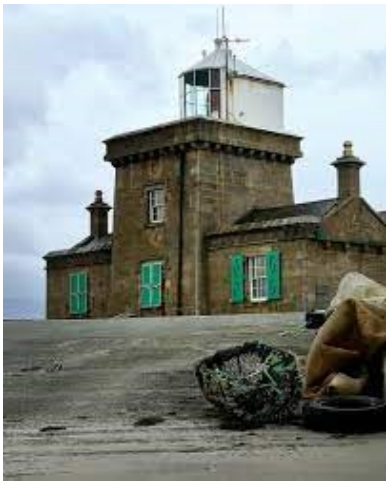
The North Dublin Radio Club meets weekly in Artane Beaumont Family Recreation Centre, Kilmore Road, Dublin 5 (opposite the roundabout at Artane Castle Shopping Centre) at 8pm. Their club net is held Saturday nights at 20:00 on 145.575 MHz FM Non-members are welcome to join the net, if only to say hello, give and receive a signal report.

Mayo Radio Experimenter's Network

The Mayo Radio Experimenters Network will hold their next club meeting on Wednesday evening August 3rd @ 9.00pm in the Breaffy House Hotel, Breaffy. Everyone is welcome to come along on the evening.

The club would love to extend our congratulations and good wishes especially to **Eamonn Gannon EI7LC** club member, also to all other students who sat and achieved their call signs, Congrats. we need you and look forward to hear you on the bands.

To all those who did not get across the line this time we say keep going and don't give up, if the questions didn't suit this time you are still learning and next time you will be successful. You will achieve and get your callsign which will give you access to the bands. Good Luck.



Our members intend activate the Blacksod Lighthouse, Belmullet, Co Mayo, especially this year 2022 its the celebration of the Silver Anniversary of the International Lighthouse / Lightship weekend! 25th year in existence. Its normally held on the 3rd full weekend in August. This year its on from 00.01UTC 20th August to 24.00UTC 21st August 2022 (48 hours). https://illw.net.

It is one of the most popular international amateur radio events in existence probably because there are very few rules and it is not the usual contest type event, its free and there are no prizes for contacting large numbers of other stations. August has become "Lighthouse Month" due largely to the popularity and growth of the ILLW.

Galway VHF Group

As the restrictions for COVID no longer apply, the Galway VHF Group are now back in action. Last month Members of the Galway VHF Group assisted the Castlebar walking Festival. Despite the fact that numbers were down on previous years, there were 450 from various parts of the world. The marshals used a high band VHF Frequency, not amateur bands, to communicate amongst themselves and both Tom, EI2GP, and Steve EI5DD, had access to their net and were able to provide services where required. Tom and Steve were on 2 metres and also had access to the High band VHF net via a handhelds. The 4 four days walks were relatively incident free as the weather was very mild and the ground not too slippery.

Our next event will be the Galway Walking club Marathon walk in Connemara held on the Western Way. This takes place on Saturday the 13th of August. This will be the last of our EmComm events for this year bringing us to a total of 5 operations this year.

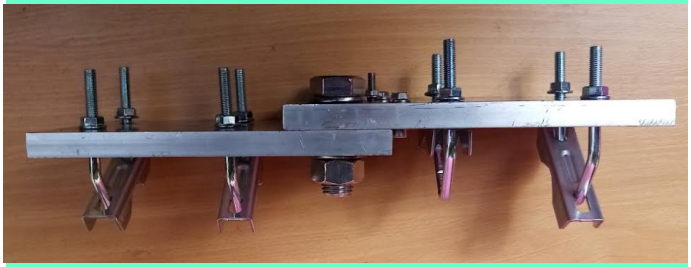
While others are talking about it we, at least get down and get on with it! All of our Digital and Analog equipment is less than a year old and fully functional. Our HF systems have done us proud as we had plenty of time to manufacture new antenna systems to suit all occasions.

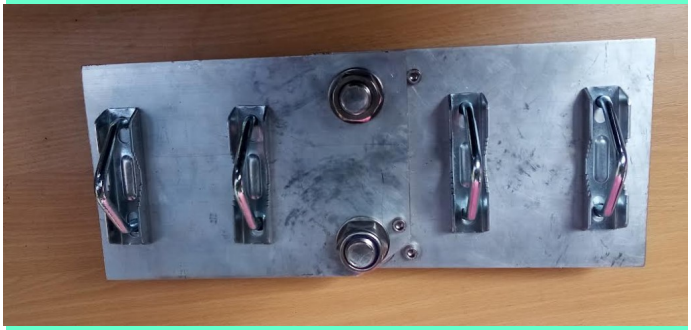
For Sale - Antenna Tilt Plates

Antenna tilt plates for sale **160 Euro** shipped via DPD within EI suitable for Hex, Cobweb and Yagi antennas that are on a tilt mast to make maintenance and repair easier. Overall 30mm thick aluminium plate design, each side of the plate being 15mm.With 30mm on its overlap with stainless steel pivot and nyloc nut hardware for added flexibility. With a set of dual heavy duty V clamps on the upper and lower plate allow for universal mounting onto a variety of masts and antenna stub masts which can accommodate mast and stub poles up to 50mm in diameter which are then secured into the V clamps by its clamp and Jaw hardware.

These are new and are handmade and never been used.

Contact: Charlie Carolan
087 6265418
or
charlie.carolan@gmail.com





RSGB Radio News Services From GI

10:00 3640KHz LSB Dungiven

12:00 TG2354 Time Slot 2 BM Network

19:30 TG 880 Time Slot 2 Phoenix Network

Shannon Basin's Automated Stations

Sliabh Bán Repeater O/P: 145.775 ,I/P :145.175, CTCSS 88.5

Roscommon Multimode Digital Gateway EI2BED 144.8625 MHz

Current Systems Active in Galway

70cm DMR Repeaters

EI7RHD	**I/P 430.450**	**O/P 439.450**	**CC1**
EI7LRD	**I/P 430.475**	**O/P 439.475**	**CC1**
EI7AKR	**I/P 438.425**	**O/P 430.825**	**CC1**
EJ7IBD	**I/P 430.500**	**O/P 439.500**	**CC1**

Yaesu Fusion Repeater

EI2KMR I/P 145.025 O/P 145.625 Wires –X

Gateways

EI2SHD	**144.8125**	**Wires-X Gateway**
EI2GCD	**145.850**	**P25 Gateway**
EI4GCG	**70.425**	**ALLSTAR node**

What is Waiting in the Wings?

1 x 70cm D-Star Repeater

1 x 70cm DMR Repeater completing the network to the South East.

Dates for the Diary

ON6ZT Hot Air Ballon Operation 10th of August

International Lighthouse and Lightship Weekend 20th - 21st of August

European Championship Contest 6th of August

Railways on the air 24th and 25th September

RSGB Ham Fest / Convention 7th - 9th of October

AMSAT UK Colloquium 8th - 9th of October

International Air Ambulance week 9th - 17th October

JOTA 14th - 16th of October

Bush Valley ARC, Limavaddy, Rally 6th November

RSGB

The Radio Society of Great Britain (RSGB) is the national membership organisation of amateur radio enthusiasts. The society was founded in 1913 and incorporated in 1926. The Society is dedicated to the development of the science and practice of amateur radio. It works to increase awareness and understanding of amateur radio and to make the hobby accessible to everyone. Amateur radio licences were issued to the first UK radio amateurs in 1934. The RSGB represents the interests of UK licensed radio amateurs and is a not-for-profit organization that:

- Promotes the general advancement of the science and practice of radio communication or other relevant subjects.
- Facilitates the exchange of information and ideas on these subjects among its members.

The RSGB aims to obtain the maximum liberty of action consistent with safeguarding the interests of all concerned. RSGB membership is open to all who have an interest in radio communications. The national governing body (The Board) is elected nationally. The regional governing body (The Regional Council) is elected on a regional basis. The day-to-day management of the society is under the control of a small team of full-time employees who are based at the society's head office in Bedford. *RSGB Membership is just £59.00 and this includes 12 monthly technical magazines.* Affiliate your club and get the opportunity for all members to log in and read the online publication of RADCOM, RADCOM Basics and RADCOM Plus as well as receiving a hard copy of the Magazine for the Club. Apply here: https://rsgb.org/main/join-us/join-the-rsgb/

WESCOM RADIO SHOP

https://wescom.ie/

AVIONIC – EXPERIMENTER / AMATEUR – MARINE RADIO

Full Range of ICOM Experimental/Amateur Radio Equipment

Tennadyne World Class Antenna systems

Spid Rotators

ACOM Linear Amplifiers

Baluns & UNUNs to suit all applications

ICOM Marine Radio

Spiderbeam Poles and Accessories

Check out our Clearance Section on the Website

Contact Us
00 353 (0)87 2552578
wescomradio@gmail.com
Deerpark, Oranmore,
Co. Galway, H91 X2YH